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FACTORS INFLUENCING THE PREDICTION OF FRESHMAN SUCCESS AT THE UNIVERSITY OF ALBERTA, EDMONTON*

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Introduction

With problems of skyrocketing enrollments, difficulties in providing facilities and recruiting faculty already causing concern, or about to do so, the first area to be examined for a possible solution invariably centres on University admission. Society has need for increased numbers of the university-trained to meet its changing technology. The University cannot now, nor could it in the past, nor is it likely in the future, to be able to afford the luxury of admitting those whose likelihood of success is small at the expense of denying entry to those whose likelihood of success is high. It is on this premise that all admissions research is founded.

Considerable work has been done at the University of Alberta in the study of admission problems (Black, 1960; Evenson and Smith, 1957, 1958; Mack, 1963; Zurowsky, 1959). Much of this work has been encouraged by a combined University and Provincial Department of Education continuing committee, the Joint Committee to Co-ordinate University and High School Curricula.

The purpose of this paper is to add to the fund of information about Alberta admissions by investigating the influence of sex, size of school, and faculty chosen on the effectiveness of predicting university freshman success.

Sample

The sample chosen for this study and which will also be used for the other papers in this series consisted of the 1962 entering freshman class at the University of Alberta, Edmonton, who had graduated from a recognized Alberta high school in June of that year. Only those students who entered the Faculties of Arts, Education, Engineering and Science were chosen.

The freshman grades of these students were obtained from the Registrar's Office of the University. The Grade XII Departmental marks and Principals' Rating scores were obtained from the Depart-

*This is the second in a series of six articles dealing with related problems in the selection of University students.

ment of Education, Examinations Branch. The authors wish to acknowledge with a deep sense of gratitude the help they received from these two organizations which far exceeded the mere act of making these marks available to the investigators.

From this basic sample, all cases who had matching Departmental and Principal's Rating scores in English 30, Social Studies 30, and at least one course in each of the areas of Mathematics, Science and Foreign Language to a total of six courses, were chosen to comprise the study sample. When students had more than one course in an area, for example, Chemistry 30 and Physics 30, these marks were averaged to give a single score, Science Average. The same procedure was followed in mathematics, and foreign language.

The average of marks received by each student in his freshman year was used as the criterion variable.

Statistical Analysis

All data were coded and punched on IBM cards. These cards were fed into the University of Alberta IBM 1620 Computer using their program for Stepwise Regression-Revision I (Program No. 1620 - 016). The program yielded for each sample's predictor and criterion variables, the means, standard deviations, zero order and multiple correlations, the beta weights, and the constant for the regression equation. The program is such that the predictor variables are taken in successive order determined by the amount each contributed to the prediction. All predictor variables are used.

Size of Graduating High School

There is considerable evidence that the size of the high school is an important factor in determining success at university (Bloom and Peters, 1961; Bou and Stavall, 1950). There is no known published report of similar data for Alberta schools.

It is difficult to determine readily the exact enrollment of a high school in Alberta before the end of the school year. However, all Alberta principals must report to the Department the number of teachers on their staffs in the fall of the year. The number of teachers in each school does relate to student enrollment, and this became the basis for determining school size. Each student, then, was classified as to the size of his graduating high school according to the number of teachers on staff. Table I reports the number of students in the sample in each faculty by sex from high schools of varying size. One feature of this table is particularly striking: the disproportionate appeal of Education to students from smaller high schools and the failure of this same faculty to appeal to students from larger high schools. The means and standard deviations for the predictor and criterion variables for the seven categories of school

TABLE I: DISTRIBUTION OF SAMPLE BY SEX AND SIZE OF GRADUATING HIGH SCHOOL FOR FOUR FACULTIES

No. of Teachers in Graduating High School	FACULTY													Total		
	Arts			Education			Engineering			Science						
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total				
1 - 5	10	6	16	15	51	66	7	--	7	3	9	12	41	60	101	
6 - 10	20	14	34	35	76	111	17	--	17	3	39	42	111	93	204	
11 - 15	10	10	20	14	30	44	17	--	17	6	22	28	63	46	109	
16 - 20	4	20	24	9	50	59	6	1	7	7	18	25	37	78	115	
21 - 25	17	9	26	7	21	28	12	--	12	3	19	22	55	33	88	
26 - 50	29	23	52	15	34	49	23	--	23	10	53	63	120	67	187	
50 and over	47	37	84	11	30	41	19	--	19	13	56	69	133	80	213	
TOTAL	137	119	256	106	292	398	101	1	102	45	216	261	560	457	1017	

size are reported in Table II. The multiple correlation of the criterion with the predictor variables is also reported in this table.

It will be noted that a clear break exists in the size of multiple correlation coefficients between schools with 21-25 teachers and those with 26 or more teachers. With one exception, the multiple correlation coefficients from the smaller schools cluster between .567 and .586. The exception is the very small high schools with one to

TABLE II: MEANS AND STANDARD DEVIATIONS OF PREDICTOR AND CRITERION VARIABLES AND MULTIPLE CORRELATION COEFFICIENTS FOR SEVEN CATEGORIES OF SCHOOL SIZES

Size of School	Grade XII Departmental Scores					University Freshman Average	University	
	English 30	Social St. 30	Math. Average	Science Average	Foreign Language		N	R
1-5 teachers	$\bar{X}$ 68.60 S 10.64	67.51 9.96	64.81 10.10	68.10 7.43	68.84 10.47	60.61 7.96	101	.643
6-10 teachers	$\bar{X}$ 67.68 S 9.88	69.00 8.81	65.91 10.51	68.59 8.39	66.26 10.00	59.37 9.37	204	.567
11-15 teachers	$\bar{X}$ 68.61 S 10.35	70.17 9.96	68.35 11.07	69.72 8.77	69.65 10.42	59.99 9.53	109	.586
16-20 teachers	$\bar{X}$ 70.70 S 10.23	69.51 10.51	68.43 10.98	69.39 10.07	72.59 11.11	60.55 9.86	115	.570
21-25 teachers	$\bar{X}$ 68.82 S 9.91	70.69 11.38	66.27 10.58	69.80 8.59	67.61 11.96	59.95 10.75	88	.585
26-50 teachers	$\bar{X}$ 70.28 S 10.74	70.98 10.09	69.20 12.63	71.75 10.06	68.95 12.83	63.01 11.07	187	.721
51 and over teachers	$\bar{X}$ 71.06 S 10.66	72.91 9.77	68.57 11.44	69.62 10.05	71.72 11.45	61.53 11.50	213	.766
TOTAL	$\bar{X}$ 69.50 S 10.42	70.30 10.27	67.48 11.47	69.59 9.54	69.29 11.73	60.84 10.33	1,017	.636

five teachers where the multiple correlation coefficient was .643, well below those found for the two largest high school categories of .721 and .766. When the ranks of the means for the different subjects from each school category were examined, it was found that the two large school categories ranked consistently in the top three. On the basis of this evidence, it was concluded that the seven categories of school size could be grouped into two categories, small high schools with twenty-five or fewer teachers, and large high schools with more than twenty-five teachers. The findings are compatible with those of Bou and Stovall (1950) who grouped schools into two categories of less than 500 students, and 500 or more students.

When the means and standard deviations for the the two classes of schools were calculated and tested for significance of difference, all mean differences were significant at the 5% level or higher. These data will not be reported here but will be found in other tables to be reported later. The difference between the two multiple correlation coefficients, .560 and .753, for the small and large schools, respectively, was found to be significant at the 1% level of confidence.

Influence of Faculty Entered

Faculties have traditionally defined the grades and patterns of Grade XII subjects required for admission to their faculty. This may be highly prescriptive as in Engineering, or it may be quite general reflecting possible broad areas of specialization within faculties, such as, in Education where many of the students' courses are taken in the Faculties of Arts and Science. Recognizing that this pattern is not likely to change, the purpose of this part of the paper is to determine if the prediction of success is more efficient in some faculties than in others. The means and standard deviations for both the predictor and criterion variables as well as the multiple correlation coefficients between the five Departmental score predictors and the University Freshman average criterion are reported in Table III.

No differences between the Grade XII subject means by faculty were found to be statistically significant. However, a comparison using Friedman's Two-Way Analysis of Variance by Ranks (Siegel, 1956, pp. 166-172) rejected the hypothesis that the ranks of the mean scores were randomly distributed among the four faculties. Students who entered Arts had the highest mean scores in English 30, Social Studies 30, and Foreign Language, and the second lowest in Mathematics and Science. The opposite pattern was shown by Engineering students who ranked highest in Mathematics and Science, and lowest, or second in the others. Science students ranked consistently second highest in all Grade XII variables, while Education students ranked consistently lowest or second lowest. As noted

TABLE III: MEANS AND STANDARD DEVIATIONS OF PREDICTOR AND CRITERION VARIABLES AND MULTIPLE CORRELATION COEFFICIENTS FOR FOUR FACULTIES

Faculty	Grade XII Departmental Scores						University Freshman Average		N	R
	English 30	Social St. 30	Math. Average	Science Average	Foreign Language					
Arts	$\bar{X}$ S 72.51 10.40	73.23 10.34	65.39 10.93	67.94 9.76	71.54 12.27		61.57 9.52		256	.653
Education	$\bar{X}$ S 67.96 10.08	66.65 9.37	63.66 9.75	66.78 7.62	68.58 11.01		59.99 8.03		398	.596
Engineering	$\bar{X}$ S 66.99 9.54	70.85 9.83	74.05 10.65	74.07 8.86	67.23 10.68		57.49 13.10		102	.750
Science	$\bar{X}$ S 69.87 10.63	72.78 10.02	72.80 11.65	73.76 10.13	68.97 12.38		62.74 12.37		261	.737
TOTAL	$\bar{X}$ S 69.50 10.42	70.30 10.27	67.48 11.47	69.59 9.54	69.29 11.73		60.84 10.33		1.017	.636

TABLE IV: MEANS AND STANDARD DEVIATIONS OF PREDICTOR AND CRITERION VARIABLES BY SEX FOR SMALL AND LARGE HIGH SCHOOLS

Size of High School	Sex	Grade XII Departmental Scores					University Freshman Average	R	
		English 30	Social St. 30	Math. Average	Science Average	Foreign Language		N	
Small	Male	66.26	70.35	69.07	70.16	66.26	58.86	307	.555*
	Female	9.59 71.17 10.17	9.67 68.26 10.11	10.77 64.32 10.10	8.93 67.91 8.28	10.51 71.03 10.69	10.78 61.04 8.00	310	.610
Large	Male	68.26	72.35*	70.30	71.30*	67.65	61.00	253	.718*
	Female	10.72 74.88 10.12	9.29 71.42 11.02	11.96 66.41 11.71	10.14 69.42 9.93	12.02 75.19 11.20	11.72 64.32 10.27	147	.791
Total	Male	67.16	71.25	69.63	70.68	66.89	59.83	560	.635*
	Female	9.94 72.36 10.29	9.54 69.14 10.99	11.33 64.86 11.10	9.51 68.26 9.41	11.26 72.23 11.64	11.26 62.09 8.91	457	.679

*Differences not statistically significant. All others significant at p = .01

earlier, the poorer performances of pupils from small high schools, from which the bulk of Education students are drawn, could be a contributing factor to this standing.

In terms of predicting University freshman average, the faculties ranked from highest to lowest were Engineering, Science, Arts, and Education. The difference in the size of the validity coefficient was statistically significant between Education and both Science and Engineering at 1% level of confidence; all others were not. The low Education validity coefficient would suggest that while students in that faculty perform generally more poorly, as might be expected from their Grade XII marks, many of these students overcome the academic handicaps imposed upon them by attending small high schools and perform well at University. This relationship of students' backgrounds to University performance deserves further and more detailed examination than it has been given in this study.

In conclusion, differences were found which while not individually significantly different, did, in fact, suggest that differences in admission standings do exist which were occasioned, no doubt, by the admission practices of each Faculty.

Sex Differences in Predictive Efficiency

Sex differences are to be expected in the prediction of University success. It has long been established that, as groups, girls perform better on tasks involving verbal skills while boys excel in the mathematical/quantitative areas. This has been confirmed in university prediction studies by Abelson (1952), Garrett (1949), Lewis (1962), and Seashore (1962), to list a few.

For this study, the data were first analyzed to determine means and standard deviations for each sex; first, for the total sample, and then, for the two categories of high schools established earlier. These statistics are reported in Table IV along with the multiple correlation coefficients. All sex differences are significant at the 1% level of confidence except for Social Studies 30 and Science Average means for students from large high schools. It will be noted in Table IV that while the sex differences in the validity coefficients are not statistically significant, in each case the higher correlation coefficient is found for the female sample. As a rule, female performance is numerically, if not statistically significantly, higher in English and Foreign Language, while the male sample presents higher means in Social Studies 30, Mathematics, and Science Averages for both size of high school and for the total sample.

Table V presents the same data for each of the four faculties. No sex differences were found for Social Studies means in Arts and Education, and Science Average in Arts, Education and Science.

TABLE V: MEANS AND STANDARD DEVIATIONS OF PREDICTOR AND CRITERION VARIABLES BY SEX FOR FOUR FACULTIES

Faculty	Sex	Grade XII Departmental Scores					University Freshman Average	N	R
		English 30	Social St. 30	Math Average	Science Average	Foreign Language			
Arts	Male	69.52	73.81*	64.80*	67.25*	67.27	59.31	137	.558
	Female	9.79 75.96 10.05	8.47 72.57 12.14	9.30 66.80 12.56	7.72 68.73 11.66	10.08 76.46 12.76	9.56 64.18 8.83	119	.746
Education	Male	61.65	66.82*	66.07	66.39*	64.78	58.13	106	.470
	Female	8.10 70.25 9.75	7.95 66.59 9.84	9.94 62.78 9.54	7.21 66.92 7.78	11.90 69.96 10.35	7.65 60.66 8.07	292	.634
Engineering	Male**	66.99 9.54	70.85 9.83	74.05 10.65	74.07 8.86	67.23 10.68	57.49 13.10	102	.750
Science	Male	68.56	72.05	72.34*	73.33*	67.61	61.99	216	.722*
	Female	10.17 76.16 10.64	10.05 76.29 9.18	11.81 74.93 10.68	10.30 75.82 9.11	11.89 75.51 12.68	12.50 66.42 11.18	45	.796

*Sex difference not statistically significant. All others are significant at p.05 or better.
** Consists of 101 males, 1 female. Sample treated as all males.

TABLE VI: REGRESSION EQUATIONS FOR THE PREDICTION OF UNIVERSITY FRESHMAN SUCCESS IN FOUR FACULTIES BY SEX AND SIZE OF GRADUATING HIGH SCHOOL FROM GRADE XII DEPARTMENTAL SCORES

Faculty	School Size	Sex	N	R	Beta Weights				Constant	S.E. est.
					English 30	Social St. 30	Math Average	Science Average		
Arts	Small	Male	61	.444	-.017	.267	.121	.298	13.43	+9.26
		Female	59	.693	.229	-.016	.131	.310	14.68	+5.67
	Large	Male	76	.733	.131	-.138	-.075	.609	4.14	+6.54
		Female	60	.826	.322	.029	.070	.312	-3.93	+5.85
Education	Small	Male	80	.495	.003	.195	-.066	.016	25.47	+7.14
		Female	228	.635	.126	.309	-.014	.210	13.35	+6.01
	Large	Male	26	.640	.156	.255	.004	.197	15.24	+5.51
		Female	64	.651	.195	.139	.097	.357	5.54	+7.34
Engineering	Small Large	Male	60	.732	-.239	.203	-.062	1.087	-22.67	+9.41
		Male	42	.831	-.262	.245	.552	.492	-17.43	+7.73
Science	Small	Male	107	.632	.040	.303	.059	.401	-2.23	+9.14
		Female	22	.621	.159	.104	.238	.200	3.85	+8.76
	Large	Male	109	.799	.111	.260	.411	.173	-18.31	+8.23
		Female	23	.909	.346	.093	.236	.401	-25.96	+5.52

No significant differences in Mathematics Average between sexes were found in the Faculties of Arts and Science. Viewing only numerical differences of the means, and the total performance of all the sample, it is noted that the means of girls in both Arts and Science were numerically higher in both Mathematics and Science Average means than male means although these differences are not statistically significant. This pattern is contrary to the findings of the total sample where it is clear that the high mean performance of the male Engineers' sample when added to the male sample from the other three faculties provided the advantage to the males in these courses. It is also clear that the female Science students are a highly select group whereas male students entering the Faculty of Arts show interests in areas which are not predominantly mathematics/science oriented.

Summary

On the basis of the evidence presented, it was concluded that differences in performance and prediction do exist relating to sex, faculty, and size of graduating high school. In the case of the size of high school, it was found that two categories of size of school could be justified from the data, small high schools with twenty-five or fewer teachers, and large high schools with more than twenty-five teachers. Faculty differences, while not as clearly defined, do exist and can be attributed largely to differences in the admission requirements of each. Sex differences were found in the performance on the Grade XII departmental scores which were found, in turn, to exist within the two school size categories and to a lesser extent in the faculty entered. The multiple correlation coefficients with the criterion, however, showed no statistically significant sex differences except for the size of school and for the Faculty of Science. The generally larger numerical size of the coefficients for female samples lent support to other investigators' findings of better predictions for female students.

This study did not consider the size of relative beta weights for the various sub-samples broken down according to the three factors considered in this paper. However, it is apparent from the beta weights of the regression equations reported in Table VI that differences do exist.

It was concluded that the prediction of freshman success at the University of Alberta could be improved by considering the sex, size of graduating high school, and the faculty the student proposes to enter.

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THE ANCESTRY OF CURRENT GERMAN SCHOOL REFORMS

By

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In attempting to set down antecedents of educational phenomena in European nations with long records of intellectual and institutional endeavor, one must resist the temptation to reach farther and farther back into the past, to the point where enthusiasm with historical relationships accounts for more in the perceived connection than do the facts themselves. Realistically, the background of a system, as an organizational or theoretical entity and including formulated dissents to it but within it, can only extend to those previous periods which can be identified with the point of perspective by congruence of cultural patterns. Further, the separate threads of social and intellectual development which eventually determine the form and content of a national system of education can only be assured of treatment in their organic result, that is, at the point where they converge in an educational complex.

Prussia may be considered the core around which the German nation was formed, and the nineteenth century the period of completion of a Prussian school system. Although there were compulsory attendance regulations as early as 1619, and some moves had been made toward systematizing education, Frederick the Great and his minister, Zedlitz, must be given credit for taking the first significant steps toward a state school system in the modern sense. With the school code of 1763, almost every Prussian child received some schooling, and by the end of the century, the important foundations for nineteenth-century advances had been laid. State control was firmly established after 150 years of moving away from church domination of education. The secularization of education during this period, however, and to some extent up to the present day, applies to administration and control, and not to the schools themselves in any general sense, as was true of the parallel development in the United States. German language and nationality had come to the intellectual fore. The uplifting of the masses had begun, although the motives for social improvement were not only or primarily humanitarian, and the extent of this uplifting was strictly limited by the resistance of the rulers and nobility to education and social advance beyond a minimum they considered harmless.

With Wilhelm von Humbolt at the beginning of the nineteenth century, the new ideal in German education became Greek humanity tied to German nationalism. This new humanism may be considered a response to strong national and liberal sentiments, and a reaction against the domination of intellectual endeavor by either medieval religion or naturalistic reason. The philosophies of Kant, Fichte, and Hegel emphasized the state's moral responsibility, which suggested vigorous efforts in education and supported the extension and standardization of a state system under the new Prussian Ministry of Education.

Significant standardization moves in the early 1800's were made in connection with the secondary schools: the curriculum was centered around Latin, Greek, German and mathematics ("purest" relative of the natural sciences); the secondary teachers' examination was set in 1810; and new regulations for the secondary Leaving Examination were issued in 1812. By the fourth decade of the century, the Leaving Examination (*Abiturienten Examen*) had superceded entrance exams as the prerequisite for university entrance, and is even today only weakly challenged as the exclusive criterion by which fitness for higher education should be measured.

Elementary education got a fresh start from the social stimulus of the French Revolution and the subsequent devastating political effects on Europe. Pestalozzian ideas were intentionally brought into Prussian primary education and teacher training practices, with resultant liberalizing and advance in educational opportunity for the common people. By 1840 there were numerous teacher training institutions in Prussia, requiring three years after primary schooling, and including practice teaching during the last year of training. As stated earlier, however, strong reaction on the part of the nobility against too much education for the masses continued throughout the century. Elementary and teacher training schools were restricted to the simplest elements of learning during the mid-century upheavals, officially in the 1854 *Regulativen*. It was not until Bismarck again furthered the expansion of elementary schooling that this branch came out from under the pall of oppression spread over it by the aristocracy. Not only was the elementary curriculum expanded to include a wide selection of subjects and more realistic methods and training, but the *Mittelschule* was brought into the educational structure, and the teacher training program was lengthened to six years, divided into an academic-preparation and a training phase.

Science and research were not alien to the nineteenth century. Wilhelm von Humboldt's activities at the University of Berlin set a pattern of independent research as a university function. How in-

dependent the university should be, and how dominant its research role should become are questions still with us in the twentieth century. Nevertheless, von Humboldt's ideas were to provide the model for German universities, and to a large extent, for American universities in the following decades. In addition to von Humboldt's humanism, however, new forces of realism were impinging on German education. The technical institute (*technische Hochschule*) appeared, applying science to technology, and was to win its way to acceptance in the structure. At mid-century, the *Realgymnasium* was incorporated in the academic system, and by the end of the century, both this semi-classical school and the non-classical *Oberealschule*, were granted the same privileges as the classical *Gymnasium*. Thus were established basically the secondary divisions which exist today.

The goal of the nineteenth century *Gymnasium* has been fixed as education for entrance into the ruling classes.¹ However, the variations of the *Gymnasium* which appeared in the years before and after 1900 were called forth, at least in part, by changing socio-economic conditions to which the humanistic idealism of the classical *Gymnasium* did not respond. As more people were able to better their positions in economic and social spheres not directly connected to educational advantages, they sought to protect their gains and open the way to further advancement via the accepted medium of the *Gymnasium*. The fact that it was often too remote from their interests and needs led to the establishment of new types based on the old model, which would retain the prestige of academic secondary education and yet satisfy new social and individual requirements.

The resistance of the classical *Gymnasium* to these new types was almost fanatical. The *Gymnasium*, in order to retain its monopoly, tried to assume the whole task of secondary education, and added subjects in increasingly broad areas. By the end of the century the overburdening of the secondary curriculum was a critical problem.

In the first decade of the twentieth century, Friedrich Paulsen could summarize the following trends in German education: a goal of universal, national education, to include all children and all creeds; the extension of state interest to problems of organization and instruction within the school; the acceptance of new functions and methods by the *Gymnasien*; expansion of the elementary school curriculum; better training for elementary teachers; growth of adult education; and more realism in instruction in all branches.² These were trends as viewed at the time, however. Much lay between these estimates and their realization.

1. Gustav König, *Der Wandel im deutschen Schulwesen* (Mannheim, 1949), p. 7.

2. Friedrich Paulsen, *German Education Past and Present* (London: T. Fisher Unwin, 1908), pp. 270ff.

The active interest in educational progress so evident at the beginning of the century returned with new vigor after some measure of recovery from the national crisis of the first world war was achieved. The Weimar period brought a reforming spirit to education as well as to politics. It was a learning period for Germany, when little was accomplished practically or permanently, but the entire educational field was illuminated with new ideas, and some of these began to take shape experimentally.

The national school conference of 1920 abounded with new proposals and constructive discussion. In the report of this conference alone may be found the roots of most of the later reforms and early attempts to meet problems which are still in the focus of educational attention.³

The establishment of the four year *Grundschule* as the common base of education for all German children was perhaps the most important educational achievement of the period, and one which reflected the sentiment that the common school had a contribution to make to a democratic society. Much attention was also given to the upper elementary level (*Volksschuloberstufe*), but attempts to change the secondary schools only resulted in the addition of the *deutsche Oberschule*, which incorporated the ancient-language, modern-language, and mathematics-natural science tracks in one school, with an integrating emphasis on German studies.

Elementary teacher training and status were upgraded with a Prussian order of 1926, which required preparation in an academic secondary school for all *Volksschule* teachers. Professional training was provided in a *pädagogische Akademie* in Prussia, in other states in educational institutes, seminars, or *Hochschulen*, special higher schools for the study of education. Several states inaugurated university study for elementary teachers,⁴ and although only Hamburg made a lasting success of this venture, the seed of the idea was planted for later growth.

The contribution of the Weimar educators can, in fact, be better appreciated by considering their ideas and proposals than by attempting to recount the tangible results they were able to achieve in the short span of time allowed them for productive work. The report of the 1928 Berlin Congress on the contemporary *Volksschule* emphasized a broadly humanistic educational goal, but placed the development of the child's independent personality and creative

3. *Die Reichsschulkonferenz 1920, Amtlicher Bericht* (Leipzig: Quelle and Meyer, 1921).

4. Sachsen, Thüringen, Braunschweig, Jena, Hamburg. The correlation of industrial localities and strength of the Social Democratic party with moves to raise elementary teacher status points to the social-democratic rather than the pedagogical purpose of these moves.

talents in central focus of a social-reform humanism.⁵ Knowledge gained was to be realistic and applicable to life.

This emphasis on life-related instruction appears repeatedly in contemporary publications, and indicates how strongly the need for more realistic schooling was felt among many educators. Erich Hylla and Stephan Konetzky, writing for the Central Institute for Education and Instruction in 1931, could define instruction as an active means of understanding one's personal and cultural environment, and advocating connecting schoolwork to present and future rather than to past situations. The content of this kind of instruction would have to be meaningful in terms of the present and coherently integrated.

However, the basis for instruction, although locally determined, was to be central curriculum planning, and the demand for realism in instructional content and method was frequently couched in philosophical terms almost incomprehensible for practical application. For example:

The total instructional program, especially in the areas of the intellectual disciplines, must unfold the inner life of the soul, free the mental processes, and develop the capacity of the child to comprehend intellectual and spiritual concepts.⁶

Both the conflict between authoritarian structure and independent initiative in a flexible educational situation, and the obstruction to expedient action caused by prerequisite philosophical *Auseinandersetzung* have remained primary factors restricting German efforts in school reform.

The Prussian General School Regulations of 1922 pointed out specifically the need for new methods of instruction in the primary school, which would call forth the development of the "whole child", bring the classroom closer to real life, emphasize independent decision and activity on the part of the pupil, leave more room for doing and experimenting, and use observation of the child's environment to best advantage. These directions also criticized the existing *Staatsbürgerkunde* as inadequate for political education which embraced the concept of cooperative, democratic living—a criticism which returned with new vigor after 1945.

In the 1932 yearbook of the Central Institute for Education and Instruction⁷ Ministerialrat Weinhold spoke out against the striving for completeness which had overloaded the curriculum of the upper

5. *Bericht über den Kongress Berlin 1928*, "Die neuzeitliche Volksschule."

Much of the documentation for the Weimar reforms has been collected in an excellent summary by Ann Banaschewski in the *Material und Nachrichten Dienst*, December 15, 1955, under the title, "Die Reform der Volksschuloberstufe."

6. Banaschewski, *op. cit.*, p. 18.

7. *Jahrbuch 1932, Zentralinstitut für Erziehung und Unterricht*, "Das Deutsche Schulwesen".

level of the primary school and caused it to lose sight of its real objective. (The problem arose from the attempt of the Volksschule to follow the pattern of the higher-status *Gymnasium*; the same criticism had already been leveled against the *Gymnasium* earlier). Weinhold, perhaps reflecting his official position, pressed for improved selection of subject matter through improvement of official curricula and he located the basis of subject matter selection in the trinity of *Volkstum*, *Heimattum*, and *Kindertum*.⁸ This last is interesting to remember, when recent statements of a similar nature are considered; there is not too much risk in generalizing that all official or even authoritative current statements would include an international basis, or at least European.

Because of the liberal ideas of this period tended to remain in the idea state, Professor Erich Hylla's estimates of accomplishments, needs, and problems in German education around 1930 are still largely applicable in the Sixties. Hylla could say that by 1930, the old rigid form of instruction had disappeared, that methods were generally flexible, and that the teacher-pupil relationship was more human and natural.⁹ He pointed out the need for more coordination among schools, especially between the Volksschule and the part-time vocational school (*Berufsschule*) normally following it, the need for grouping of subjects in coherent units, and the necessity to depart from the domination of theoretical learning in the schools. The pressure for entrance into the academic secondary schools was, according to Hylla, lowering the level of pupils in the *Volksschuloberstufe*.

The suggestion that the difference between the upper level of the elementary school and the academic secondary school should be one of direction, not degree, typifies the European approach to equality of opportunity through separate schools. But support for the six year *Grundschule* with a common, differentiated subsequent step came closer to the American principle of an unified system.

Practical attempts towards realizing this idea would be . . . especially desirable in Germany. The main obstacle to its accomplishment is undoubtedly the traditional form of our school system, which has certainly grown out of a society sharply divided by classes.¹⁰

A school system developed in accordance with sharp class divisions in the society, and transmitted with this pattern of divisiveness inherent in it, will present an obstacle to liberal school reform by its very structure. Social institutions may retain such characteristics long after their cause or rationale has disappeared.

Proposals for a revision of *Volksschule* aims and practices stressed independent pupil work, with both group and individual activity

8. These terms combine the concepts of home, nation, race (in a national sense) and childhood.

9. Banaschewski, *op. cit.*, p. 26.

10. Erich Hylla, *Ibid.*, p. 36.

replacing closed class instruction, subject correlation under the "unit" principle, and experience methods based on pupil interest. The criticism against the upper level of the elementary school as an unnatural step, starting at a too early age and releasing youth into the work in the middle of their developmental years indicated the support for extended elementary schooling.¹¹

For the most part, however, reform plans lacked concrete recommendations and did not deal with the total institution of education in German society. Conviction of the necessity for a new spirit in education was present, and the movement had great value in adding activities and new ideas to the school program, but a departure from the traditional pattern to an actual organization and curriculum reform proved extremely difficult.

Where the attempt was made to view education as part of the total situation of the time, the inevitable conclusion was reached that social reform must reach into education and be furthered by it. At the same time, however, most educators were reluctant to surrender the ideal of traditional humanistic education, and the anachronistic effort to preserve the latter in any reform scheme blocked meaningful changes.¹²

Advocacy of new concepts of interest, spontaneity, and timeliness in instruction did not imply the dismissal of older concepts emphasizing universal values in the traditional pattern of education. Neither the soul nor the intellect were to be subordinated in a "socialized education." The view that this had happened to American education in the course of technical advancement is one not confined to German educators or to past decades.

It would be unjustified to censure Weimar educators for their inability to unshackle education from obsolete ideas and practices and to implement an acceptable total reform in a time of almost continuous crisis for Germany. At the same time, it would be unrealistic to give undue credit to ideas which were not carried through. However, the focusing of attention on the necessity to actively involve persons in cultural development rather than making them passive recipients of developed Forms, in the process to build adequate personalities in all children, and to provide an institutional framework suitable to the twentieth century shows the presence of a constructive, liberal spirit. There is no doubt that this spirit and the initial achievements towards school reform made during the twenties provided a foundation for new attempts after the "blackout" years between 1933 and 1945.

11. See Max Reiniger, *Die Erneuerung der Volksschuloberstufe* (Langensalza, 1932).

12. See *Bericht über den pädagogischen Kongress des deutschen Ausschusses für Erziehung und Unterricht* (Weimar, 1926).

HOME AND SCHOOL ASSOCIATION ACTIVITIES IN THE EDMONTON AREA: TWO STUDIES

By

THOMAS McKENDRY

AND

JOHN R. WRIGHT

The Problem

The low level of participation by parents and teachers in Home and School activities in the Edmonton area may be due to some extent to uncertainty concerning the values of the activities for public education. It would be unfortunate if any of their potentiality for improving education should not be utilized because of this uncertainty. There appears, then, to be a need for the collection of data concerning the nature and scope of the activities so that their values might be assessed with an increased degree of validity. To provide data of this nature was the basic purpose of the two investigations¹ reported here.

The Procedure

From a survey of related studies and literature, information and ideas were compiled and used as the bases from which the questionnaire employed in the investigations was constructed. The questionnaire was comprised of eleven main sections designed to obtain information on the following topics:

1. The number and length of meetings held.
2. The representation of principals and teachers and of males and females in the membership and attendance figures of the Associations.
3. The nature and extent of study group activities.
4. Activities tending to facilitate acquaintanceship between parents and teachers.
5. Program planning activities.
6. Involvement of the local Associations in regional, provincial and national Home and School activities.
7. Influence exerted by local Associations on the schools, school boards, and the Department of Education.
8. Fund-raising objectives and activities.
9. Methods used to obtain publicity.

1. T. McKendry, *A Survey and Analysis of the Activities of Edmonton's Home and School Associations...* Unpublished M.Ed. thesis, University of Alberta, 1964.

1. J. R. Wright, *A Survey and analysis of Local Home and School Activities in the Edmonton Area.* Unpublished M.Ed. thesis, University of Alberta, 1963.

10. The nature and seriousness of problems encountered by the Associations.
11. The nature and relative frequencies of activities and topics used in programs.

In the study conducted by John R. Wright, copies of the questionnaire were mailed to all of the 118 rural Associations in existence within ninety miles of Edmonton during the year from 1960 to 1961. Eighty-four questionnaires, or 71 per cent, were completed and returned. In the urban investigation conducted by Thomas McKendry, questionnaires were mailed to all of the ninety-four Associations which comprised the Edmonton Council of Home and School Associations during 1960-1961. Fifty-four of these questionnaires, or 57 per cent, were completed and returned.

The Findings

Nature and Extent of the Activities

1. The main function served by the Associations was that of informing parents concerning the activities of the schools. In the rural survey area it was found that 47 per cent of the activities and 57 per cent of the topics were concerned with achievement of this purpose. Within the Edmonton Council, 50 per cent of the activities and 58 per cent of the topics served to inform parents concerning school activities.

Table I shows the numbers and percentages of times the various types of activities were engaged in. Table II shows the relative frequencies of inclusion of the topical areas covered in the Associations' programs.

2. Both of the studies indicated that a large proportion of the Associations' activities was devoted to the development of acquaintanceship between parents and teachers. Increased acquaintanceship might be expected to lead to greater cooperation and to freer exchange of ideas and information between parents and teachers.

Thirty-eight per cent of the rural Associations' activities and 32 per cent of the urban activities appeared to contribute to the development of acquaintanceship. The activity most frequently employed to facilitate acquaintanceship was that of serving refreshments at meetings.

3. Topics classified as being remote from or unrelated to the public education of children were found to represent 16 per cent of the total usage of topics by the rural units and 8 per cent of the total usage of topics by the urban units. It seems that Home and School programs could have been improved considerably by the displacement of these topics by others having greater relevance to the education of school-age children.

TABLE I
NUMBERS AND PERCENTAGES OF TIMES TYPES OF
ACTIVITIES WERE INCLUDED IN PROGRAMS

Type of Activity	Edmonton City		Rural Area	
	No. of Times	Per Cent	No. of Times	Per Cent
Making information about education available to parents	632	50.0	866	47.3
Facilitating acquaintanceship between parents and teachers	400	31.6	691	37.8
Concerned with the physical well-being of children	64	5.1	19	1.04
Raising funds	63	5.0	48	2.6
Entertainment	60	4.8	90	4.9
Encouraging children in educational achievements	39	3.1	114	6.2
Total	1258		1828	

TABLE II
NUMBERS AND PERCENTAGES OF TIMES TOPICAL
AREAS WERE INCLUDED IN PROGRAMS

Type of Activity	Edmonton City		Rural Area	
	No. of Times	Per Cent	No. of Times	Per Cent
The public education of children	400	58.2	473	56.6
The child's physical welfare outside of the school	111	16.2	66	7.9
Understanding of child behaviour	55	8.0	31	3.7
Remote from or unrelated to the public education of children	53	7.7	132	15.8
The Home and School Association	48	7.0	104	12.4
Children's out-of-school activities	20	2.9	29	3.5
Total	687		835	

4. Only a small number of the Associations engaged in activities intended to bring about changes in school policies or practices by influencing principals, school boards, or the Department of Education, in various ways. The data obtained indicated that 38 per cent of the rural units and 34 per cent of the urban units engaged in activities of this nature.

5. Fund-raising received considerable emphasis as an activity of the rural Associations and less emphasis among the urban Associations. Sixty-four per cent of the rural Associations conducted two or more fund-raising projects during the year, 32 per cent conducted one, and the remaining Associations conducted none. Twenty-two per cent of the Associations comprising the Edmonton Council conducted two or more fund-raising projects, 67 per cent conducted one, while the remaining Associations had none.

6. Opportunity usually was provided for teachers and principals to submit their opinions concerning programs to the program planning committees. Teachers or principals were represented on the program planning committees of 70 per cent of the rural Associations and on 89 per cent of the urban Associations.

Attendances and Memberships

1. A serious weakness of the Associations was found to be the small representation of parents participating in their activities. The rural and urban studies both showed that only 15 per cent of parents of school-age children were Home and School members. Furthermore, Wright found that an average of 11 per cent of parents attended general meetings in the rural survey area while McKendry found that 10 per cent attended general meetings within the Edmonton Council.

It appears, then, that whatever benefits may have been derived from participation in Home and School activities were limited to only a small number of parents.

2. The attendance of teachers at meetings was, on a percentage basis, high compared to the attendance of parents. Averages of 43 per cent of rural teachers and 42 per cent of urban teachers were found to attend the general meetings.

3. Male participation was small compared to female participation. The rural and urban studies both indicated, for example, that approximately twice as many females as males attended the general meetings, nineteen mothers compared to ten fathers attending in the rural units and thirty-nine mothers compared to eighteen fathers in the urban units.

Problems of the Associations

The following were considered to be serious problems by the respondents representing the rural Associations.

	<i>Per Cent of Respondents</i>
1. Small attendances at monthly meetings	67
2. The unwillingness of suitable persons to accept executive positions	40
3. The reluctance of members to participate in group study activities	38

The urban survey indicated that the most serious problems were:

	<i>Per Cent of Respondents</i>
1. Small attendances at monthly meetings	57
2. The unwillingness of suitable persons to accept executive positions	44
3. The scarcity of male members.	33

Further Research Needed

Valid appraisal of Home and School activities in the Edmonton area should be facilitated to some extent by examination of the two studied reported here. A greater degree of validity would be made possible, however, by additional research.

Some questions remaining to be answered are: In terms of socio-economic status, personality, and interests, what types of persons participate in Home and School activities and what types do not participate? What purposes do participants and non-participants believe are being served by the Associations? What do they think the Association should and should not do? What reasons are given for participation and non-participation? What do teachers and school administrators think concerning the values of Home and School activities? Are relationships between teachers and parents better in communities having well-attended Associations than in other communities. Are there differences in the programs of well-attended units and poorly-attended ones which might explain why they are well or poorly attended?

Research directed towards comparing well-attended and relatively poorly-attended Associations in various respects should provide useful answers to these questions. Furthermore, the quality of the research would probably be improved if a variety of research techniques were employed rather than only the mailing of questionnaires as was the case in the two studies reported on here.

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THE ROLE OF THE ALBERTA SUPERINTENDENT

By

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AND

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The expectations of principals may be considered an important factor in defining the role of the superintendent of schools. A comparison of some of these expectations with corresponding perceptions of the role behavior of the incumbent superintendent should also prove helpful in clarifying the role of the superintendent and in increasing his effectiveness. Chase comments that one of the primary concerns of superintendents and principals should be to bring about harmony among expectations and between expectations and performance.¹

The present study was concerned with the role of the provincially appointed superintendent of schools in the school divisions and counties of Alberta. It sought to determine what principals consider should be the behavior of the superintendent (i.e. their expectations), and what they perceive to be the behavior of the superintendent (i.e. their perceptions) with respect to certain tasks which may be considered the duty of either a superintendent or a principal. It further sought to analyse and compare the expectations and perceptions so identified.

Theoretical Framework

Three basic ideas appear in most of the conceptualizations, developed in the literature concerning social role theory: Individuals: (1) in *social locations* (2) *behave* (3) with reference to *expectations*.² It is necessary to consider an individual's locations in social relationship systems or his "relational identities" in order to determine what *expectations* are held for him. Expectations may be defined as *evaluative standards applied to an incumbent of a position*.

An actor's behavior in a given role is influenced through a process of interaction between his self-involvement in the role and his definition of what he thinks others expect of him in it. Behavior in interaction involves continuous reassessment by the actor of others' expectations, and redefinition by others of their expectations as situations change.

1. Francis S. Chase, "How to Meet Teachers' Expectations of Leadership," *Administrator's Notebook*, I, 9 (April, 1953).

2. Neal Gross, Ward S. Mason, and Alexander W. McEachern, *Explorations in Role Analysis: Studies of the School Superintendency Role* (New York: John Wiley and Sons, Inc., 1958), p. 17.

When a position incumbent perceives that the same or highly similar expectations are held for him by different individuals or groups which he regards as significant, a *role congruency* may be said to exist. Any situation in which an incumbent perceives that he is confronted with incompatible expectations is referred to as a *role conflict*.

A number of studies conducted in Canada and the United States have indicated that role conflict has an adverse effect on job satisfaction and effectiveness. Some research has been undertaken with respect to the superintendency role and identification of certain areas of role conflict. This study sought to complement the work of Collins,³ Hencley,⁴ Finlay,⁵ and others.

Procedure

The data for this study were collected by means of questionnaires modified from earlier studies. One hundred eighty divisional and county school principals in an area adjacent to Edmonton (within zones II and III as classified by the Alberta Department of Education) acted as respondents in this study. They indicated their expectations for, and perceptions of, the role behavior of the superintendent for each of 53 critical tasks. These were selected on the basis of possible overlap of principals' and superintendents' functions. The critical tasks were divided into six general areas: instructional leadership, selection and management of staff personnel, pupil personnel, school-community leadership, provision and maintenance of school facilities and school transportation. With respect to each task, the respondents selected one of four variations of role behavior that the superintendent might follow:

- (a) Independent action by the superintendent
- (b) Action in consultation with the principal
- (c) Action at the request of the principal
- (d) No action by the superintendent

In addition to tabulating the replies of all respondents for each administrative task, the data were analyzed to ascertain any significant differences between expectations and perceptions of elementary and junior high school principals and those principals in schools which include senior high grades; between principals of smaller

3. Cecil P. Collins, "The Role of the Provincially Appointed Superintendent of Schools in Larger Units of Administration in Canada (unpublished Doctoral dissertation, The University of Alberta, 1958).

4. S. P. Hencley, "A Descriptive Survey of the Alberta Divisional and County School Superintendent" (unpublished Master's thesis, University of Alberta, 1958), and Stephen P. Hencley, "The Conflict Patterns of School Superintendents," *Administrator's Notebook*, I (April, 1953).

5. John H. Finlay, "Expectations of School Boards for the Role of the Provincially Appointed Superintendent of Schools in Alberta" (unpublished Master's thesis, University of Alberta, 1961).

schools and those of larger schools; between relatively inexperienced and more experienced principals; and among principals with no degree, those with one or more bachelor's degree(s) and those with one or more years of university graduate work completed.

Results reported here were tested at the .05 and .01 levels of significance by the Chi-square test of independence.

Results

The findings in this study reveal considerable variation in the expectations and in the perceptions held by principals with respect to the role of the superintendent, both within and between the groups employed for purposes of comparison. The existence of expectations which are incompatible may be taken as indicating the presence of role conflict. Furthermore, inasmuch as considering the school principals as a reference group is concerned, it appears that no clear-cut, all-inclusive definition of role which might apply for any incumbent of the superintendency is possible. Nevertheless, some general patterns in the overall expectations and perceptions may be noted, and the expectations of principals in differing relational and situational setting can be interpreted to indicate the type of role behavior that might be most effective in a particular situation.

The Expectations

Expectations of "action by the superintendent in consultation with the principal." Approximately one-half of the respondents expected the superintendent to act in consultation with the principal in all of the task areas excepting that of "school-community leadership." In the latter case, 35 per cent expected "action at the request of the principal," but 31 per cent of the respondents expected the superintendent to act independently of the principal.

Expectations of action by the superintendent independently of the principal. A substantial proportion of the principals expected the superintendent to act independently in the areas of "instructional leadership" (21 per cent), "school-community leadership" (31 per cent), and "school transportation" (25 per cent). Relatively large proportions of the respondents expected the superintendent to act independently in connection with the supervision and evaluation of teaching staff. There was a definite trend for a number of the principals of smaller schools and the relatively inexperienced principals to expect independent action. There appear to be specific tasks in the area of instructional leadership that substantial proportion of the principals regarded as being quite legitimately within the scope of independent behavior by the superintendent. Furthermore, principals of smaller schools and relatively inexperienced principals

looked to the superintendent for action independent of them to a considerably greater degree than did other groupings of principals.

Although only 13 per cent of the respondents expected independent action by the superintendent in the task area of "pupil personnel," the principals of smaller schools (and to a lesser degree, the relatively inexperienced principals) tended to expect the superintendent to act independently to a greater extent than did principals in other classifications. The tasks involved here concerned policy formulation, supervision of evaluation of student aptitude, ability, and achievement, and disciplinary measures.

There was a tendency for more of the principals of small schools than those of larger ones to expect the superintendent to act independently in the area of "provision and maintenance of school facilities," although the proportions holding such expectations were relatively small.

Approximately 60 per cent of all respondents expected that the superintendent would act independently with respect to the task of keeping the school board informed regarding aims and objectives of the school. We can conclude that the majority of principals agreed that the superintendent might legitimately perform independently in this connection.

Expectations of "action by the superintendent only upon request by the principal." Many respondents indicated that the superintendent should take action only at the request of the principal in the task areas of "instructional leadership" (20 per cent), and "school-community leadership" (26 per cent). There were a number of principals with elementary and/or junior high grades who expected the superintendent to act in consultation with the principal to a lesser degree than did other classifications of respondents, but who expected the superintendent to perform only at the request of the principal with respect to certain tasks involving giving advice or instruction to teachers. There was a tendency for principals of schools with senior high grades included and principals of larger schools, in particular, to consider that there were tasks within the area of "pupil personnel" with respect to which the superintendent should show little or no inclination to institute action, and in which he should become involved only when asked by the principal to do so.

Perceived Role Behavior

Analysis of the responses indicated that there was considerable variation in principals' perceptions of the role behavior of the superintendent. Thirty per cent of the respondents perceived the superintendent acting in consultation with the principal with respect to all of the tasks considered in the study. However, the responses were

widely distributed, and approximately 20 per cent of the respondents, perceived the superintendent acting independently, acting at the request of the principal, or taking no action, in each case.

Perceptions of "action in consultation with the principal" and of "no action by the superintendent" were reported by a greater proportion of principals of schools with senior high school grades included, principals of schools with ten or more teachers, principals with more than five years of experience, and principals with bachelor's degrees or post-graduate training than by those of other classifications.

The respondents who tended to perceive "action by the superintendent independently of the principal" most frequently were principals of schools with elementary and/or junior high grades only, principals of small schools, relatively inexperienced principals, and principals who did not have university degrees.

Divergence of Principals' Expectations and Perceptions Relative to the Superintendency Role

For 29 out of the 53 tasks included in the study, the principals involved held perceptions of the superintendent's behavior which differed significantly from their respective expectations. The highest proportions of tasks where differences occurred were in the areas of "instructional leadership," and "selection and management of staff personnel." The lowest proportions of tasks involving significant differences between expectations and perceptions were in the areas of "provision and maintenance of school facilities," and "school transportation." In virtually every case involving significant differences between expectations and perceptions of the superintendent's role behavior for a particular task, there were proportionally fewer principals who perceived "action in consultation with the principal" than of those who expected that behavior pattern.

Conclusions

The very considerable differences in expectations and in perceptions held by certain classifications of principals, and particularly by the principals in smaller schools as compared with those in large school situations, indicate that the superintendent's behavior needs to be flexible and variable if he is to meet the expectations of principles in differing circumstances. The nature of the expectations and perceptions suggests that incumbents are in various stages of development. Some are ready to assume leadership and supervisory functions, and are capable of doing so, whereas others may not yet have achieved sufficient experience, or status to warrant the assumption of full responsibility in this regard. A superintendent must

assess all of the factors of a situation which are available to him, and make decisions concerning his course of action relative to that situation.

Nevertheless, the fact that the respondent principals expected the superintendent to act in consultation with the principal to a much greater extent than they perceived him doing suggests that the superintendent should strive to work more closely and cooperatively with principals than he has in the past. Perhaps the superintendent-principal relationship should in many respects approach a partnership arrangement. This does not mean that the superintendent needs to, or should, relinquish his function as educational leader in the school system. Rather, he should work with and through the principals in accomplishing the desired educational ends.

PERSONALITY CORRELATES OF A COMPOSITE CRITERION OF TEACHING EFFECTIVENESS

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In a recent review of the voluminous literature on teacher personality and behavior, Getzels & Jackson (1963) concluded that too many studies of teacher personality and effectiveness have resulted in negative or trivial findings, and suggest that the problem of criterion definition is responsible for much of the trouble. In the course of carrying out the design from which the present paper emerged, the criterion problem became of acute concern. The manner in which the problem was handled in the present investigation deserves particular attention, since it involves a number of assumptions concerning the nature of what is usually so glibly referred to as "teaching effectiveness".

Seemingly, the most straight-forward way of determining whether a teacher is effective or not is to watch her teach and decide on the basis of what is observed. Watching teachers is a time-consuming and expensive procedure, and when more than one person is employed, problems of inter-judge reliability arise. Since one or two classroom hours are usually the unit of observation, questions regarding adequate sampling of behavior of the teacher may also be raised. Pupils' evaluations, which were employed as one of the methods in the present study, circumvent the behavior-sampling problem, but involve other assumptions concerning value-system differences between adults and adolescents.

A somewhat different frame of reference is involved if the evaluations of teaching potential are based on analysis of data derived from projective tests. Test data are behaviors in one sense, but they are necessarily removed at least one step from directly-observable performance before a class. Because projective analyses permit generalized delineation of major trends and aspects in personality structure, such assessments provide a view of the individual which goes beyond and often beneath the superficial expressions of the interaction of these stable characteristics with the specific characteristics of the teaching situation. Depth assessment of general personality attributes, combined with evaluations based on observed perform-

ances, may well provide a more meaningful criterion of teaching potential than either method alone.

Although the original design of the present study involved only the use of supervisor ratings of effectiveness as the criterion measure, the final selection of criterion groups was based on a composite of evaluations by supervisors from observations, and by assessors using only a projective device. Some of the implications of this dual criterion approach will be discussed later in terms of the findings to be reported.

Method

From the files of the Mental Health in Teacher Education project at The University of Texas, two groups of student-teachers were selected on the basis of the following criteria:

1. female
2. rated by their supervising professors as either highly effective (rating of one on a seven-point scale) or highly ineffective (rating of five, six, or seven)
3. evaluated with *Pupil Observation Survey (POSR)* (Veldman & Peck, 1963) and therefore majoring in secondary education (seventh through twelfth grades)
4. scores available from the *California Psychological Inventory (CPI)* (Gough, 1957)
5. scores available from the *Self-Report Inventory (SRI)* (Brown, 1961)
6. Completed form for the *One-word Sentence Completion* (Peck & Veldman, 1961)

Two groups of 31 subjects each were identified (high and low-rated by supervisors). The 62 sentence-completion forms were then independently evaluated and sorted into equal groups by two judges experienced in sentence-completion analysis. Agreement as to high or low placement with regard to teaching potential was achieved by these judges for 46 of the 62 subjects ($P < .001$). The judges then jointly resolved their differences of opinion regarding the other 16 cases and produced a final consensus placement of all subjects into two final groups of 31 each.

When this grouping was compared with that resulting from the original selection based on supervisory ratings, only 34 agreements resulted ($P < .50$). This rather disturbing outcome prompted an inspection of the supervisor ratings and disclosed the fact that many of the disagreements were due to the meaningless use of single scale-point (the highest one) by some supervisors for all of the student-teachers they had assessed. At this point the authors were faced with the choice of abandoning completely the study as originally de-

signed, or of attempting to salvage smaller criterion groups upon which both supervisors and judges agreed in the ratings of effectiveness. The present report, then, concerns the reduced groups resulting from application of the rule that *both* sentence-completion judges and supervisor must agree regarding the effectiveness level. Thirty-four subjects were retained for the subsequent analyses.

Two-group analyses of variance were computed for each of the 10 scores available from the *Self-Report Inventory*, for all 18 scales of the *California Psychological Inventory*, and for each of the factors of the *Pupil Observation Survey*.

Results

In Table I the results from the analyses with the *Pupil Observation Survey* and the *Self-Report Inventory* are presented. (see Table I).

Factor I of the POSR (*Friendly, Cheerful, Admired*) and Factor IV (*Strict Control*) yielded highly significant differences between the means of the two groups. Student-teachers rated as effective are regarded by their pupils to be considerably higher on both of these characteristics. These attributes are not necessarily self-contradicting in conjunction; they suggest firm discipline without the harshness or interpersonal distance that often characterizes the authoritarian teacher. On the other hand, the effective teacher is not simply warm and friendly; she provides a meaningful structured classroom atmosphere.

There was a tendency for the effective teachers to be rated higher on poise and knowledgeability (Factor II), but this effect did not reach an acceptable level of reliability. Of some interest also is the finding that the Third Factor (*interesting, Preferred*), and the Fifth Factor (*Pupil-centred*) did not show *any* ability to differentiate the two criterion groups. There is a strong suggestion in these latter findings that professional evaluations of teaching effectiveness and pupils' preferences in teacher-behavior do not share a common value orientation.

Examination of the particular scores from the SRI which successfully discriminated the criterion groups suggests that the effective teachers report considerably more positive attitudes towards all aspects of their personal worlds. Of particular interest are the very much more positive attitudes toward *Self* and *Authority* and the more comfortable acceptance of *Reality* on the part of the effective teachers. These people report a high degree of self-assurance, in a context of willingness to accept the world as it is—particularly the structure of legitimate authority relationships.

TABLE I
MEANS AND SIGNIFICANCE TESTS FOR EFFECTIVE
AND INEFFECTIVE STUDENT-TEACHERS ON THE
POSr AND SRI SCALES

Scale	Effective Mean	In- effective Mean	F ratio	P
<i>Pupil Observation Survey</i>				
Factor I: Friendly, Cheerful, Admired	55.00	45.79	9.43	< .005
Factor II: Knowledgeable, Poised	50.85	44.83	2.01	< .20
Factor III: Interesting, Preferred	50.88	49.56	.16	
Factor IV: Strict Control	53.66	42.58	14.66	< .001
Factor V: "Pupil-centered"	48.37	46.89	.13	
<i>Self-Report Inventory</i>				
Self	21.18	15.18	11.43	< .005
Others	21.24	19.12	3.38	< .10
Children	19.82	16.29	3.25	< .10
Authority	20.41	17.59	9.10	< .01
Work	16.82	15.65	.71	
Reality	17.65	13.24	10.05	< .005
Parents	18.71	16.41	1.19	
Hope	21.06	19.47	3.38	< .10
Total	156.88	132.94	12.25	< .005
(O+A+P)/(S+W+R)	1.09	1.26	3.31	< .10
N=	17	17		

Half of the scales from the CPI yielded differences significant beyond the 5% level of confidence, in which the effective teachers obtained higher scores, as shown in Table II. (see Table II) Especially striking were their higher means for *Achievement via Conformity* (but not via *Independence*), *Capacity for Status, Dominance, Good Impression, Sociability*, and *Psychological-mindedness*. The suggestions from this group of findings support some of the indications previously mentioned. The effective teachers appear to be socially involved and active individuals, although firmly anchored within the social and academic achievement-structure in which they find themselves. The fact that the *Socialization* scale yielded virtually no difference in means for the two groups offers little support for the notion that ineffective teaching behavior is a systematic resultant of anti-social attitudes.

Discussion

As defined by the criterion groups isolated in the present study, ineffective teaching behavior appears to be a function of inadequate social skills, lack of self-assurance, and inability to function comfortably within the authority structures of extant institutions.

TABLE II
MEANS AND SIGNIFICANCE TESTS FOR EFFECTIVE AND
INEFFECTIVE STUDENT-TEACHERS ON THE SCALES
OF THE CPI

CPI Scale	Effective Mean	In- effective Mean	F ratio	P
Do—Dominance	32.82	26.88	8.94	< .01
Cs—Capacity for status	23.29	19.59	9.94	< .005
Sy—Sociability	29.41	24.82	6.73	< .025
Sp—Social presence	37.41	33.88	2.20	< .20
Sa—Self-acceptance	25.00	22.65	4.83	< .05
Wb—Well-being	37.35	34.41	2.63	< .20
Re—Responsibility	34.59	31.35	4.59	< .05
So—Socialization	39.65	37.94	.92	
Sc—Self-control	30.53	27.00	2.73	< .20
To—Tolerance	24.82	21.65	4.59	< .05
Gi—Good impression	20.76	15.71	8.59	< .01
Cm—Communality	25.65	25.75	.01	
Ac—Achievement via conformity	31.20	25.88	13.70	< .001
Ai—Achievement via independence	20.53	20.12	.11	
Ie—Intellectual efficiency	41.59	38.18	3.95	< .10
Py—Psychological-mindedness	13.24	10.59	7.35	< .025
Fx—Flexibility	10.88	9.94	.63	
Fe—Femininity	22.76	23.59	.61	
N=	17	17		

It is possible, of course, to interpret certain of the present findings as indications of support for the often cited “conformity” of American teachers. Such a view, however, overlooks the fact that the effective teachers in the present sample also indicate considerably stronger feelings of self-assurance and social dominance than might be expected from a timidly stereopathic personality syndrome. The quality of the acceptance of extant institutional structure appears to be one which permits the individual to function comfortably and with optimal results. Considering the nature of most American school systems, with their overpowering ability to suffocate and ultimately reject the rebel with unique ideas, the qualities displayed by the effective teachers in this study may well be survival qualities. If change is possible in the typical American school system, the improvements which are likely to last are usually initiated from *within* the structure by individuals who have the desire for improvement *and* the ability to bring about the necessary alterations through tactful manipulation of the existing structure.

The highly-selected samples employed in the present study represent the combined opinions of two groups of professionals who

place a premium on certain personality characteristics which are directly relevant to the findings. The psychologists who undertook the sentence-completion analyses, particularly, but also many of the student-teacher supervising professors, consider autonomy and originality to be highly important characteristics. To a certain extent, their evaluations of the student-teachers reflect the presence or absence of these characteristics. The student-teachers chosen as most effective for the present study did, in fact, appear quite unlike the ineffective teachers along many dimensions reflecting aspects of ego-strength. At the same time, the selected student-teachers *also* indicated an unusual willingness to accept traditional authority patterns. The use of a composite criterion in this study may well have avoided the two horns of a dilemma in selecting optimally effective teachers. Autonomy and self-assurance, particularly when combined with a strong anti-authoritarian character structure, often lead only to stiffened resistance on the part of school administrators. At the other extreme, timid adherence to tradition may be quite acceptable to administrators, but the cumulative effects of staffing the schools with such individuals are only too well known.

Summary

Two criterion groups of 17 female student-teachers were selected by means of a composite of evaluations by supervising professors and sentence-completion assessments. The two groups were compared on five factors of the *Pupil Observation Survey*, 10 scores from the *Self-Report Inventory*, and the 18 scales of the *California Psychological Inventory*. Effective teachers were considered by their pupils to be more friendly, yet more completely in control of their classes. They indicated a considerably greater degree of self-acceptance as well as social dominance when compared to the ineffective teachers. The effective teachers were also found to be more accepting of traditional authority relationships, and for this reason could be expected to display the ability to work for improvements from *within* established institutional patterns without engendering the hostility and resistance often aroused by those who seek changes in public school programs.

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THE LINGUISTIC TRAINING OF CANADIAN TEACHERS

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From his family and acquaintances an individual learns how to speak his language for purposes of ordinary communication. It is the role of the school to teach him how to read and write, and to lend some measure of polish and facility to his speech. Professional educators have little control over the family or acquaintances, but otherwise they must accept total responsibility for the quality of the linguistic training offered the student during his years in public school. In particular, it has been the task of the elementary school teacher and the high school teacher of English to maintain the precious heritage of literacy in our society. How successfully have these linguistic responsibilities been met?

It is apparent that neither educators nor the general public are satisfied with the standard of literacy achieved by the schools. It is a commonplace to say that the fundamental skills of reading, writing and speaking are minimal; furthermore, the majority of students understand few or none of the principles of language, have slight desire to extend their command of language, are casual about the beauties of language, largely fail to recognize the persuasive power inherent in language, and in general, are ill-equipped to enjoy the pleasures and to avoid the dangers of mass communication.

There are several reasons why public education has failed to achieve an acceptable standard of literacy. Hasty or poorly informed curriculum planning has sometimes been responsible; unsuitable or outdated textbooks are common; overcrowded classrooms have contributed to the problem; badly designed programs of mass testing are frequently blamed; but probably the major weakness lies in the teaching itself. This does not mean that teachers have neglected their duties. Within the limits set by their training and classroom environment, most do the job to the best of their ability. Few teachers, however, can easily rise above the limitations of their professional university training, and if the standard of instruction in reading, writing and speech is unsatisfactory in the public schools, then it is to the program designed to prepare teachers that one must first turn in seeking a remedy.

There are many questions that might be asked of teachers—particularly of elementary school teachers and English teachers—in attempting to assess their qualifications for teaching the young about language. How well acquainted, for instance, are they with the origin and development of the English language? How firm a grasp do they have of the origin and principles of prescriptive grammar? Are they aware of the challenge to traditional grammar or modern linguistic science? Are they able to demonstrate the approach to language of the advocates of structural and transformational grammar? Do they understand the principles of lexicography, and are they conversant with the theories and problems in matters of usage?

These considerations gave rise in the autumn of 1964 to a survey of teacher training institutes in Canada in an attempt to assess to what extent formal training in the history and principles of the English language is required of prospective teachers in this country. Research appeared to be non-existent. In the United States, surveys indicated that probably only about twenty percent of training institutions require courses in linguistics of their students.

Six copies of a questionnaire were sent to the thirty-eight universities and teachers' colleges (excluding French-speaking schools) that train teachers for the public schools. The questionnaires were to be passed along to anyone on the staff involved in English or "Language Arts" methods courses at the intermediate, elementary or high school levels.

Replies were received from 31 institutions, including all major universities. Every province was represented in the figures. Replies from individual staff members totalled 53.

If it is agreed that knowledge of and facility in the sounds and written symbols of the English language are of vital importance to teachers, then the results of the survey make it clear that institutions of teacher education in Canada should undertake a close analysis of the linguistic training given their graduates. In most programs at present, such training appears to be either haphazard or non-existent. Replies indicate that only one-quarter of the elementary teachers and high school teachers of English are required to take a course in the history, principles, or structure of the language. But even this figure is probably optimistic: some of the courses mentioned did not have the titles traditionally applied to linguistics studies. Often the comments suggested that the training involved little more than a review of traditional grammar. Furthermore, over 65% of the institutions have no such courses available as electives to students in education.

The major reasons why Canadian teachers receive less than minimal background in the study of language are predictable: al-

most all respondents cited either lack of time or inadequate staff. The principal factor is time, a familiar enemy in the training of teachers. As long as the basic training is given in the first or second year of university, it is unlikely that much time will be available for fruitful studies in linguistics. More provision, however, should be made for later training either in the senior years or during summer sessions. Another solution would be to give the elementary teacher his professional training in the third year, which would leave the first two years free for academic studies.

A second problem is the lack of personnel in the field of linguistics. There are very few trained linguists on the staffs of Canadian universities, and the offerings of departments of English are often meagre. It is promising, however, that larger numbers of young scholars are entering the field of linguistic science, and probably greater opportunity will be provided in the future for more thorough study in language. When such opportunities do arise, faculties of Education must be prompt to take advantage of them.

It is clear, finally, that members of faculty charged with training English teachers are by no means complacent about their current programs or the quality of language instruction in Canadian schools. The replies were virtually unanimous in agreeing that more linguistic training for teachers is necessary. Furthermore, 91% expressed dissatisfaction with the curriculum and instruction in English grammar and usage in the public schools.

In spite of what is often assumed, there appears to be no wall of traditionalism facing those who hope to carry the new gospel of linguistic science into the institutions of teacher training. The results of the survey reveal a curiosity about the potential of linguistics, and a promising current of eagerness to test this potential in the public schools. It is the responsibility of the experts to provide the opportunities for English specialists in the professional schools to acquire further background so that they might more effectively fill the gap until enough trained linguists are available.

AN ASSESSMENT OF THE ACADEMIC ACHIEVEMENT OF AVERAGE AND ACCELERATED PUPILS IN EDMONTON'S CONTINUOUS PROGRESS PLAN

By
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AND
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The Purpose

The purpose of the study was to compare the academic achievement of pupils in the Continuous Progress Plan in the Edmonton Public School System with matched pupils who attended traditionally Graded classes. This comparison was possible because the Continuous Progress Plan has been introduced gradually, thereby providing a population of pupils whose schooling has been exclusively in the traditionally Graded Plan.

The Edmonton Continuous Progress Plan

At the end of grade one pupils are screened on the basis of I.Q., achievement, and the teacher's judgment. Upon entering their second year of schooling they are assigned to one of four groups: superior, high average, low average, and slow. Classes are generally made up of at least two groups with low average and superior groups usually forming one of the combinations and high average and slow forming the other.

The superior group is accelerated by completing the work of grades two, three, four, and five in three years. The high average and low average groups both proceed at the normal pace of one grade per year and the slow group is decelerated by spending five years to complete the work of the four grades, two through five. To cover the six grades of elementary school, then, the superior group spends five years, and the slow group spends seven years.

Definition of Terms

1. Average Pupils—pupils in the six-year program. The symbols 4/6 and 5/6 are used to indicate pupils in the fourth year of the six-year program and the fifth year of the six-year program, respectively.
2. Superior Pupils—pupils in the five-year program. The symbols 4/5 and 5/5 are used to indicate pupils in the fourth year of the five-year program and the fifth year of the five-year program.
3. Slow Pupils—pupils in the seven-year program.
4. Graded Pupils—pupils in the regular Graded program.

The symbols 4g, 5g, 5gg, and 6g are used to designate pupils in the fourth, fifth and sixth years of the graded program.

The Sample

The subjects of this study are restricted to nineteen Edmonton Public elementary schools. Ten of these schools used the Continuous Progress Plan and the other nine were on the Graded Program.

Pupils from the C.P.P. schools included average and superior only. Not enough pupils from the seven-year program were available for useful statistical analysis.

Measures of Achievement

The comparison of academic achievement utilized scores of the Iowa Tests of Basic Skills in vocabulary, reading comprehension, language and arithmetic skills and the Edmonton Public School Board tests in arithmetic, reading, science and social studies.

Comparison I—Average Pupils

All Continuous Progress Plan schools in the Edmonton Public School District were categorized according to socio-economic levels

TABLE I

GENERAL DESCRIPTION OF THE RESEARCH GROUPS

Research Groups	N	Mean I.Q.	Mean Age	Socio-Economic Distribution
C.P.P. 4/6	125	115.1	9.8	H—37 M—59 L—29
Graded 4g	125	115.4	9.9	H—37 M—59 L—29
C.P.P. 5/6	99	116.8	10.9	H—28 M—50 L—21
Graded 5g	99	116.7	10.9	H—28 M—50 L—21
C.P.P. 4/5	80	132.2	9.9	H—24 M—39 L—17
Graded 5gg	80	131.4	10.8	H—24 M—39 L—17
C.P.P. 5/5	70	131.5	10.9	H—21 M—42 L—7
Graded 6g	70	131.0	11.8	H—21 M—42 L—7
				M—Middle H—High L—Low

using average assessment of family homes in each district as the criterion. From each of the upper, middle and low levels one school was randomly selected for inclusion in the study. Pupils in the fourth and fifth year of the six-year program were chosen as the experimental group. Characteristics of these two groups are shown in the first and third rows of Table I.

The control pupils were chosen from schools which were using the Graded system. Three schools were randomly selected from each of the high, middle and low socio-economic groups. The fourth and fifth grade pupils were then used as individual matchees for experimental group pupils on the basis of socio-economic status of school attended, sex, I.Q. and academic content covered. Chararacteristics of these two control groups are shown in the second and fourth rows of Table I.

Comparison II—Superior Pupils

Experimental groups consisted of the entire population of 4/5 and 5/5 pupils, from the ten schools including both of these programs, and control groups were established for superior pupils in the same way as described above. Pupils from the fourth year of the five-year program were matched with grade five pupils and pupils from the fifth year of the five-year program with grade six pupils. These groups are listed in the bottom half of Table I. It is noted that the C.P.P. students are approximately a year younger in each case than their matchees in the comparable control group.

TABLE II

SUMMARY OF TESTS OF SIGNIFICANCE OF MEAN DIFFERENCES BETWEEN GROUPS OF MATCHED PAIRS

Tests	4/6 and 4g D sig.	5/6 and 5g D sig.	4/5 and 5gg D sig.	5/5 and 6g D sig.
Iowa Vocabulary.....	— N.S.D.	+ N.S.D.	— .01	— N.S.D.
Iowa Reading Comprehension.....	— N.S.D.	+ N.S.D.	— .01	— N.S.D.
Iowa Language Skills.....	— N.S.D.	+ N.S.D.	— .01	— N.S.D.
Iowa Arithmetic Skills.....	+ N.S.D.	— N.S.D.	— N.S.D.	— .01
E.P.S.B. Reading.....	— .05		— N.S.D.	— N.S.D.
E.P.S.B. Arithmetic.....	+ N.S.D.	— N.S.D.	— N.S.D.	+ N.S.D.
E.P.S.B. Science.....	+ .05	— N.S.D.	— N.S.D.	— N.S.D.
E.P.S.B. Social Studies.....				— .05

Findings

Table II shows a summary of the tests of significance of mean differences for each test and also indicates the group that achieved the higher mean. A positive D indicates C.P.P. superiority.

On the basis of the test results on the Iowa and Edmonton batteries, the average pupils in the C.P.P. showed no consistent difference in achievement from that of their matched counterparts in the Graded Plan (first and second columns). This study would indicate that the C.P.P. has had little influence on academic achievement for the average pupils.

The results of the tests administered to superior pupils indicate that the youngsters who completed five years in the Graded Program had statistically higher means on three out of seven of the achievement batteries than their matched partners who had completed the same program in four years in the C.P.P. (third column). It should again be noted that these C.P.P. pupils had spent a full year less in school than the Graded pupils. The three tests which showed significance were tests of basic skills, which are probably correlated more highly with mental age than are the local tests based on the Edmonton curriculum. It would appear that acceleration has brought the C.P.P. students almost up to the achievement level of the control students who have had an extra year of schooling.

There was no significant difference in performance between the superior pupils in the fifth year of the five-year program in the C.P.P. and matched sixth-grade pupils in the Graded Plan in six of the eight tests administered (fourth column). Superiority in the Iowa arithmetic tests can be partially explained by the fact that the graded pupils had a more intensive training in traditional arithmetic. This interpretation is supported by the finding of no significant difference on the Edmonton test. Superiority in Social Studies probably results from the fact that accelerated pupils do not move more rapidly than others through the Social Studies curriculum but rather miss parts of it. On the basis of the testing, then, it must be concluded that there was little or no difference in achievement despite the fact that pupils in the C.P.P. had attended school one year less than the Graded classes.

Implications

The C.P.P. may be considered to be successful if it provides educational advantages for the slow and the superior pupils. If this view is taken, it is sufficient to expect that average pupils should suffer no deleterious effects. The study shows that this is indeed the case as far as achievement is concerned.

If it were expected, however, that even average pupils on the C.P.P. should benefit by it, the findings will be somewhat disappointing. Yet such results are not surprising because other studies have seldom found homogeneous grouping, of itself, to produce superior academic achievement. Where homogeneous groups have higher achievement the grouping has usually been accompanied by curriculum adaptation and differentiated teaching methods. If the C.P.P. is to produce a higher level of achievement for average pupils it should concentrate on developing these areas.

Most principals who took part in the study mentioned the need for such differentiation of techniques and curricula. Suggestions pointed to a need for continual discussion, experimentation, and evaluation of methods and curricula for each group. Present knowledge in the area together with the outcomes of local efforts should be used in producing materials for assisting the teachers. Such guides would be useful to all teachers but particularly to the many beginning teachers who so commonly are placed in the middle grades of the elementary school.

Test results indicate that superior pupils in the C.P.P. who have completed the elementary program in five years are little or no different in academic achievement from matched pupils who have attended school for six years. It would appear that the academic achievement of accelerated superior pupils in the C.P.P. has proven to be most successful. These results indicate that the C.P.P. can save a pupil one year of schooling at the elementary level and still provide instruction which will enable the accelerated pupil to maintain standards of academic achievement which are not significantly different from that of comparable pupils who remain in the elementary program six years.

Higher achievement still might be gained by placing greater emphasis on the adaptation and development of suitable curriculum and teaching methods for this group also. Research also indicates that careful selection of teachers combined with some degree of teacher specialization might prove especially beneficial to superior pupils.

Before general evaluations of the C.P.P. may be made the achievement of the decelerated pupils must be assessed. Equally necessary are more studies that are now available of the effects of the C.P.P. upon factors other than achievement.

TEACHING PROCEDURES IN SOCIAL STUDIES

By

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Introduction

The aim of education is the promotion of learning. Involved in the education process are at least six sets of variables—the learner, the teacher, the course of study, the methods and procedures of teaching, the administrative arrangements and the physical environment. A considerable amount of research has been, and is being, carried on involving these aspects of education.

The purpose of this investigation was to study classroom procedures used in the teaching of social studies at the junior high school level. More specifically, this study attempted to determine what procedures are used in teaching social studies, where the teacher learned these, and the relationship of these procedures to the experience, training, sex and expressed attitudes of the teacher.

A definite need for research at the very heart of the educative process, the methods and procedures of instruction, is apparent. Corey and Monroe suggested this most definitely as follows:

When one summarizes what is definitely known in the teaching of the social studies, he is impressed by the paucity of convincing conclusions. They seem to be so few, so tentative, and so limited as to leave the whole field open for the repetition of previous studies. (2:1154)

The meagerness of knowledge and well constructed theory is indicated by the lack of agreement and clarity in the definition of the basic concepts of method, techniques and procedures. (7:108). This confusion necessitated a careful definition of the following:

Method

Method is an all-inclusive term. The concept of method is synonymous with pattern. A number of procedures or techniques are included in a method of teaching, a total pattern of instruction. Lecturing, social recitation, laboratory, Morrison Plan, Delton Plan and project are names applied to method, each different mainly because of the order of, inclusion of, or emphasis placed on instructional procedures. (1:15)

Procedure

Procedure is synonymous with technique, and these terms may be used interchangeably. Procedures or techniques refer to activi-

ties within a lesson or series of lessons used to obtain the objectives desired. Examples include lecture, question and answer, discussion, written exercise, testing and excursion.

Method and procedures are often confused because the same terminology is applied to both. Lecturing is an example of this. Also confused with procedures are the parts of a lesson which include motivation, overview, drill, review, evaluation, and the like. Most procedures may be used as a part of a lesson. For example, the audio-visual procedures may be used in motivating or testing.

Related Literature

Much research has been done and much has been written in the complex field of methods and procedures. A considerable amount is of questionable quality and difficult to evaluate. Much of the problem stems from the difficulty of subjecting the multitude of variables involved to objective or experimental treatment.

Horn isolated at least eight factors that affect or are closely related to techniques. These include the aims, subject matter form and organization, the learner or student, teacher, administrative arrangement and physical environment. (6:1-39)

The social studies curriculum in Alberta

The general objective or aim of the social studies program is:

... to develop citizens who (1) understand our changing society; (2) possess a sound framework of values and ideals which indicate what ought to be, set goals for the individual and give direction to his actions; and (3) have the necessary competence—skills and abilities—to participate in group living in such ways as to make changes in the direction of the desired values and ideals. (4:10).

The social studies course in Alberta involves the integration of history, geography, economics and other social sciences. The sequence in the junior high school is:

- (a) Grade Seven—Development of Canadian Culture.
- (b) Grade Eight—Canada and the Commonwealth.
- (c) Grade Nine—Canada in the Western World.

The program is organized in units of study.

General methods of instruction

Investigation in the field of general methods of teaching the social studies has been confined largely to a comparison of two named methods, for example, laboratory and contract method. The results of this type of research has not proven particularly fruitful. Evidence fails to support the superiority of any particular single method. (5:850) (9:245).

Teaching procedures or techniques

Research in the field of classroom techniques has been of two types. Firstly, researchers have compared specific procedures. Secondly, surveys have been made of existing practices in the schools in various areas of Canada and the United States. These surveys indicate that a variety of procedures are used in classroom instruction. These include:

1. lecturing which is defined as an extended discourse by the teacher,
2. questioning by the teacher and answering by pupils,
3. class discussion,
4. written exercises,
5. individual student reports,
6. formal written tests,
7. audio-visual devices and materials,
8. excursion or field trip,
9. small group activities,
10. individual study,
11. panels and debates, and
12. resource-person visits.

The use of a particular technique is influenced by a number of factors, but teacher-preference tends to govern, to a great extent, the choice of procedures used and the amount of time devoted to them. Class discussion, lecturing, and question and answer were among the first four procedures reported in use by all researchers. (3:350) (11:166) (12:447) (8:171).

Where do teachers learn the procedures that they use? Norris believes teachers learn to teach by example, that is, they teach as they are or were taught. (10:209). However, research evidence does not indicate how or where teachers learn their procedures.

The Regents' Inquiry represented one of the few attempts to study the relationship of the teacher variable to the procedures used in the classroom. The relationship of years of experience to method reported preferred, indicated that teachers with less than five and more than twenty-five years of experience depended heavily on the question and answer technique. They indicated less tendency to use supervised study and other procedures such as excursion and group activities than did teachers with from five to twenty-five years of teaching. Teachers with more than four and less than twenty-five years of experience reported the use of more varied procedures than did those in the two extreme groups. (11:167). Insofar as sex is concerned, women reported the use of more varied procedures than men (11:167). This study also indicated that junior

high school teachers tended to employ considerably more varied and informal procedures than did senior high school teachers. (11:167).

Research evidence is, thus, meager. This necessitated the research involved being of an exploratory nature.

Procedures of Investigation

This investigation was designed to be survey-type study. Two instruments were designed and constructed to obtain the data required. The first was a questionnaire to be answered by teachers of social studies in junior high schools, and the second was an observation schedule to be completed by superintendents on their visits to classrooms. The instruments were parallel and contained basically the same type of questions. In both cases all questions were open-ended, allowing answers other than the suggested ones to be submitted.

To allow the respondents maximum freedom in answering, the instruments were distributed through the superintendents of the Province of Alberta. Thus the anonymity of all persons participating was assured. Unsigned instruments were forwarded directly to the investigator.

Sample selection procedure was designed to obtain responses from a representative sample of the population of teachers instructing in social studies in the grades seven, eight and nine classrooms in Alberta. One hundred-forty teachers answered and returned the questionnaire and forty-two teachers were observed. This represented 69% and 79% return of the instruments. Of these, analysis showed that the university training of the sample varied from less than one year to more than six. The teaching experience of respondents varied from none to over thirty years. An equal number of men and women were included in the sample. Teachers from large and small, and urban and predominantly rural schools were included in the sample. The respondents were widely distributed geographically throughout the Province.

The data obtained were treated, statistically, in terms of rank order, percentage, Pearson product-moment correlation, the 'F test' of homogeneity of variances, the significance of difference between means, and biserial correlation. The level of significance was set at .05 with a two-tailed test being used.

Analysis of Data

Number of procedures

How many different procedures are used by teachers in social studies instruction? The average number is nine while the range is from five to thirteen. Table I below indicates the distribution.

TABLE I

NUMBER OF TEACHING PROCEDURES USED BY
TEACHERS

Number of Procedures	Number of Teachers Using	Per cent of Teachers Using
5 or less	1	.71
6	10	7.14
7	21	15.00
8	24	17.14
9	25	17.86
10	28	20.00
11	18	12.86
12	9	5.71
13 or more	4	2.86
Total	140	

How many procedures are used in a single lesson? The mean number is four while the range is from one to eleven. Table II shows the distribution.

TABLE II

NUMBER OF TEACHING PROCEDURES USED BY
TEACHERS IN A SINGLE LESSON

Number of Procedures	Number of Teachers Using	Per cent of Teachers Using
1	1	2.38
2	6	14.29
3	10	23.81
4	9	21.43
5	8	19.05
6 or more	8	19.05
Total	42	

Kinds of procedures

What procedures are used by teachers in instruction? Observation and questionnaire responses indicated that at least thirteen different techniques are used. Table III illustrates the distribution of different procedures used by teachers.

Frequency of use of procedures

Which procedures are most often used by teachers? Which are used least often? The most frequently used techniques reported were lecturing, question and answer, class discussion and written exercise. The least frequently used reported were excursions, panels and debates, and resource person visits.

TABLE III
KINDS OF TEACHING PROCEDURES USED BY TEACHERS

Kinds of Procedure	Number of Teachers Reported Using	Percentage of Teachers Reported Using	Number of Teachers Observed Using	Percentage of Teachers Observed Using
Tests	138	98.57	5	11.90
Question and Answer	137	97.86	40	95.24
Lecture	135	96.43	36	85.71
Audio-Visual Activities	130	92.86	8	19.05
Written Exercises	128	91.43	29	69.05
Class in Discussion	127	90.72	19	45.24
Individual Reports	120	85.71	15	35.71
Small Group Activities	86	61.43	5	11.90
Individual Study	79	56.43	13	30.95
Panels or Debates	59	42.14	1	2.38
Resource Person Visits	52	37.14	2	4.52
Excursions	37	26.43	1	2.38
Others	25	17.86	7	16.67
	N=140		N=42	

Teachers sources of procedures

Where do teachers learn the instructional procedures that they use? The responses from the questionnaire indicated that teachers learn procedures in several ways. Table IV shows the ten ways that teachers learn their procdures.

TABLE IV
SOURCE OF TEACHING PROCEDURES

Sources	Number of Teachers Acquiring in Indicated Way	Percentage of Teachers Acquiring in Indicated Way
Experience	133	95.00
University Method Courses	122	87.14
Observed Teachers During School Life	121	86.43
Educational Literature	116	82.86
Practice Teaching	81	57.86
Observing Fellow Teachers	56	40.00
Discussion With Fellow Teachers	19	13.57
Inservice Activities	14	10.00
Supervisory Assistance	12	8.57
Student Suggestion	3	2.14
Others	6	4.29
	N=140	

Number of procedures in relation to teachers' training

When a Pearson-product moment correlation was calculated to determine the relationship between the two factors, the resulting coefficient was found to be not significant.

Number of procedures in relation to teachers' years of experience

This relationship was analyzed in a similar manner to 'teacher training' and the correlation coefficient resulting was found not to be significant.

Number of classroom procedures in relation to sex

The relationship between sex and number of procedures was analyzed using the 'F test' for the homogeniety of variances and the test for significance of difference between two means for independent samples. The difference between means was not significant. Table V shows the distribution for male and female respondents.

TABLE V
TOTAL NUMBER OF PROCEDURES USED BY
MALE AND FEMALE TEACHERS

Number of Procedures	Female	Male
5 or less	0	1
6	4	8
7	9	10
8	11	12
9	17	11
10	18	9
11	8	11
12	3	6
13 or more	0	2
	X=9.029	X=8.957

Number of procedures in relation to expressed attitude

The results of the analysis of this relationship using the biserial correlation found the coefficient to be not significant.

Findings and Conclusions

This study was an exploratory investigation into the field of classroom procedures in teaching social studies at the junior high school level. The nature of the study, a survey, was dictated by the degree and nature of investigation in the field to date. The results of this study indicate that:

1. Teachers use a variety of procedures or techniques. No normative judgment is implied regarding the use of a number of pro-

cedures. This does not mean, of course, that all teachers use many procedures. The range is from five to thirteen procedures, while the mean number is nine. Eight or more procedures are used in teaching by 75.43 per cent of the teachers of social studies.

2. Procedures reported in use by teachers include testing, question and answer, lecturing, audio-visual activities, written exercises, class discussion, individual reports, small group activities, individual study, panels and debates, resource-person visits and excursions. Over ninety per cent of teachers use testing, question and answer, lecturing, audio-visual activities, written exercises and class discussion. The most frequently used procedures reported include lecturing, question and answer, and written exercise in that order. The least frequently used procedures include excursion, resource-person visits, and panels and debates.

3. Teachers learn or acquire instructional procedures in at least eleven different ways. These include experience in the classroom, university method courses, observing fellow teachers, inservice training, supervisory assistance and student suggestions. Actual teaching experience in the classroom is cited by teachers as the prime manner in which they learn their techniques of teaching.

4. The number of procedures used by teachers is not related significantly to the number of years of professional training, the number of years of experience, or sex of the teacher. The relationship analyzed was exclusively numerical in nature. Care must be exercised so that this finding is not extended to include, for example, effectiveness.

5. The analysis of the data proved inconclusive insofar as the relationship of attitude and number of procedures used by teachers.

The results of this investigation show that traditional procedures are by far the most popular with teachers. These include lecturing, question and answer, whole class discussion, and testing. Other techniques such as panels, excursions, debates and individual study are used much less frequently.

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THE EFFECTIVENESS OF THE GRADE XII PRINCIPALS' RATING SCORES TO PREDICT FRESHMAN SUCCESS IN FOUR FACULTIES AT THE UNIVERSITY OF ALBERTA*

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In Alberta, each high school principal is asked to submit an estimated mark for each Grade XII course taken by each Grade XII student. These marks are held by the Department of Education for use when the student is unable to write the Departmental examinations for compassionate reasons. These marks are often based on a combination of the teacher's estimate of the student's intelligence, maturation, and classroom performance during the year. However, many schools administer past Departmental examinations to their students as Easter examinations and, tempered by an adjustment for the school's average past performance on these final examinations, base their estimated score heavily on these examination results. For the purpose of this paper and the others to follow, these confidential estimates or how well a student is predicted to perform on the Departmental Examinations will be called Principal's Rating scores.

The purpose of this paper is to determine the effectiveness of these Principals' Rating scores in differential prediction equations to predict freshman success at the University of Alberta, Edmonton.

The use of high school marks to predict university success has been well documented. Many American studies use school marks which, in the absence of a formal statewide testing program comparable to the traditional Canadian pattern of achievement testing at the end of high school, can be considered as teachers' marks. The teachers' marks are claimed to be more "insightful" of student potential because of prolonged observation by the teacher during the year. Many question this, pointing out differences in ratings due to sex of student (Carter, 1953; Seashore, 1962; Klugh and Bierley, 1959; Abelson, 1952), and other biases which Williams and Knecht (1962) studied as "likability". Black's study (1958) of Alberta Grade IX Principals' Ratings found a median correlation between these marks and those of the Grade IX Departmental examinations of .65. The same Departmental scores correlated about .80 (median

*This is the third in a series of six related articles considering the problems of predicting freshman success at the University of Alberta.

r) with the School and College Ability Test (Level 3) but the Principals' Ratings correlated only about .56 (median r) with the SCAT scores. It would seem that the Principals' Ratings include factors other than just academic proficiency. There is no evidence that teachers' marks will not be good predictors of university success although Douglas' study, reported in Garrett (1949), points out that the principal's mark is not so good a predictor as high school average, nor as noted in Black's Alberta Grade IX study, does it correlate as highly with the Departmental examination scores as an academic aptitude test. The question to be answered from the Grade XII data of this study is, "If the Principals' Ratings are found to be less effective in predicting university success than the Departmental scores, are they that much poorer that they will have little value for early provisional admission to the University, or for use by the high school counsellors in academic guidance?"

The sample chosen for this study was identical to that described in detail in the second article in this series.* It consisted of 1,017 students entering the four Faculties of Arts, Education, Engineering, and Science at the University of Alberta, Edmonton, in the fall of 1962. The sample was so selected that each subject had both Departmental and Principals' Rating scores in English 30, Social Studies 30, and at least one of each of Mathematics, Science and Foreign Language areas, to a total of six Departmental scores. Where more than one examination had been written and more than one Principals' Rating was available in one of these last three areas, the scores were averaged in the area concerned to give an average mark in Mathematics, Science or Foreign Language, as the case may be. Further, the data were broken into the sub-categories of size of graduating high school as determined by the number of teachers on staff, sex, and faculty entered as established in the second article in this series. The two sizes of graduating high schools used were small high schools with twenty-five or fewer teachers on staff, and large high schools which have more than twenty-five teachers. All calculation procedures followed the pattern established in the earlier article using the University Computing Centre's IBM 1620 computer and the same stepwise regression program.

The means and standard deviations for the predictor and criterion variables are presented in Tables I and II for the total groups by sex, size of graduating high school, and faculty entered. The statistics for the subgroups defined by the three dimensions of sex, faculty entered, and size of graduating high school, while calculated, are not reported here.

*Published in this issue.

TABLE I: MEANS AND STANDARD DEVIATIONS BY SEX AND SIZE OF GRADUATING HIGH SCHOOL OF GRADE XII PRINCIPALS' RATINGS IN FIVE AREAS AND UNIVERSITY FRESHMAN AVERAGE

		Small High School			Large High School			Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Variable	N	30.7	310	617.	253	147	400	560	457	1017
English 30	$\bar{X}$ S	65.18 9.59	68.45 9.10	68.82 9.49	65.71 10.87	71.84 9.05	67.96 10.61	65.42 10.16	69.54 9.21	67.27 9.95
Social Studies 30	$\bar{X}$ S	69.93 10.15	68.95 10.26	69.44 10.21	71.62 10.32	69.56 12.15	70.86 11.06	70.57 10.68	69.01 11.36	69.87 11.01
Math. Average	$\bar{X}$ S	69.00 11.45	64.78 12.20	66.88 12.01	67.65 12.73	64.32 13.35	66.50 13.03	68.29 12.38	64.58 12.92	66.62 12.75
Science Average	$\bar{X}$ S	68.96 9.47	67.72 9.07	68.34 9.28	66.98 11.11	67.49 11.32	67.17 11.18	67.96 10.67	67.52 10.33	67.76 10.51
For. Lang. Average	$\bar{X}$ S	62.50 12.92	67.66 12.06	65.09 12.75	64.18 13.60	72.13 11.89	67.10 13.54	63.17 13.50	68.99 12.57	65.78 13.40
University Average	$\bar{X}$ S	58.86 10.78	61.04 8.00	59.95 9.54	61.00 11.72	64.32 10.27	62.22 11.31	59.83 11.26	62.09 8.91	60.84 10.33

TABLE II: MEANS AND STANDARD DEVIATIONS BY SEX AND FACULTY OF GRADE XII PRINCIPALS' RATINGS IN FIVE AREAS AND UNIVERSITY FRESHMAN AVERAGE

Variable	N	Arts			Education			Engineering	Science		
		Male	Female	Total	Male	Female	Total		Male	Female	Total
		137	119	256	106	292	398	Total*	216	45	261
English 30	$\bar{X}$ S	67.24 9.01	71.98 9.60	69.71 9.51	61.10 8.61	67.65 8.53	65.91 9.02	64.82 10.79	66.38 10.62	75.22 8.79	67.90 10.84
Social Studies 30	$\bar{X}$ S	71.88 9.50	70.59 13.84	71.28 11.71	66.35 9.24	67.38 9.99	67.11 9.79	71.10 10.42	71.61 11.66	75.11 9.97	72.21 11.45
Math. Average	$\bar{X}$ S	62.67 10.48	63.61 14.36	63.11 12.42	64.07 10.84	63.50 11.89	63.66 11.61	73.86 9.54	71.32 13.28	73.89 11.81	71.77 13.06
Science Average	$\bar{X}$ S	65.23 9.47	67.25 12.92	66.17 11.23	64.25 9.09	66.55 8.83	65.94 8.95	70.02 9.13	70.56 11.80	74.49 9.28	71.23 11.49
For. Lang. Average	$\bar{X}$ S	63.07 11.89	72.77 13.50	67.58 13.54	61.56 13.84	66.52 11.58	65.20 12.40	63.28 12.32	64.04 14.80	74.78 12.06	65.59 14.91
Univ.Fresh. Average	$\bar{X}$ S	59.31 9.56	64.18 8.83	61.57 9.52	58.13 7.65	60.66 8.07	59.99 8.03	57.49 13.10	61.99 12.50	66.42 11.18	62.74 12.37

*101 males, 1 female.

Referring to comparable tables in the second article which presents similar data for the Departmental scores (Tables II-V), and to Tables I and II of this paper, the following conclusions may be drawn:

1. While performance of students from large high schools was significantly higher than that of students from small high schools on all Grade XII Departmental scores and University freshman average at the 5% level of confidence, only two of the five subject Principals' Rating means (Social Studies and Foreign Language) showed statistically significant differences. On the other hand, comparing the Departmental and Principals' Rating means for the same subject, all five Principals' Rating means were numerically smaller for students from large high schools, but only two Principals' Rating means from the small high schools were numerically smaller. However, of the three means from the small schools that were numerically larger, the actual difference between Departmental and Principal's Rating score means did not exceed .20 of a score.

2. Considering the differences in performance between male and female students alone, it was found that with the exception of the female Mathematics Average and Social Studies means, the differences on the Departmental examinations favored the female students. All differences favoring the Departmental results were significant at the 1% level. On the Principals' Rating means, while the advantage again favored female students, there were two exceptions to the findings for Departmental scores; first, the Social Studies mean grade now favored the female students at the 5% level of confidence; and second, there was no significant difference between male and female samples on Science average. On this analysis, however, in every instance the Departmental mean score was numerically higher than the Principals' Rating mean score for the same Grade XII subject.

3. Considering both size of high school and sex of the student, it was found that for small schools, female performance numerically exceeded male performances only in English, Foreign Language and University average. These differences were statistically significant for all Departmental score means at the 1% level, but on the Principals' Ratings only the differences between the sexes on Social Studies and Science were not statistically significant. In all but female Social Studies and Mathematics average means, the Departmental means numerically equalled or exceeded the Principal's Ratings. In the case of the two exceptions, the differences were .69 and .46 scores, respectively.

In the case of large high schools, the Departmental scores numerically exceeded the Principal's Rating on all Grade XII subjects.

With two exceptions, significant differences at the 5% level or better were found favoring either females (English and Foreign Language) or males (Mathematics.). The exceptions were Social Studies and Science average, where for both the Departmental and Principal's Rating mean scores, no significant differences between the sexes were found.

4. In terms of the four Faculties, the rankings of the means of the various Grade XII Principals' Ratings follows those of the Departmental scores. For example, Engineering with its high emphasis on Mathematics, had, on the average, a higher standing mathematics score (significant at the 5% level) than did the other three faculties. Comparing Faculty sex differences and relationships between Departmental and Principals' Ratings means, of fifty such comparisons, only four reported the Principal's Rating mean higher than the equivalent Departmental mean, and in one instance, the two were tied. None of these differences was statistically significant.

From this it can be concluded that there is sufficient evidence to suggest that the Principals' Ratings tend to be lower than the actually achieved Departmental scores. Moreover, apart from the tendency to lower marks, the Principals' Rating generally follows a similar pattern to that found for the achievement test scores on the Departmental examinations.

The multiple correlation coefficients of the five Grade XII Principals' Rating predictor variables and the criterion variable, University freshman Average, and those used when the Departmental score variables were used as predictors are reported in Table III.

Analysis of these coefficients found that with three exceptions, there were no statistically significant differences between the coefficients obtained by either set of predictor variables. However, of the thirty-nine coefficients reported, only eight instances were found when the Principals' Rating based multiple correlation coefficients were numerically higher than those when the Departmental scores were used, and four of these were for male students from small high schools.

It can be concluded that while the Principals' Ratings do not give as good a prediction as the Departmental scores, the loss is, in fact, small. For example, when predicting University freshman success using the Principals' Ratings for the total population of this study ($N = 1,017$), the loss in predictive efficiency is only 2.4% over that when the Departmental scores are used as predictors. This loss is more than offset by the advantage of the early date that the Principals' Ratings could be available, possibly two and a half months or more before the Departmental scores are currently released. This

TABLE III: MULTIPLE CORRELATION COEFFICIENTS BETWEEN UNIVERSITY
FRESHMAN SUCCESS AND GRADE XII DEPARTMENTAL AND
PRINCIPALS' RATING SCORES BY SEX, FACULTY AND
SIZE OF GRADUATING HIGH SCHOOL

Faculty/Score	Small High School			Large High School			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Arts N Dept. P.R.	61 .444 .484	59 .693 .635	120 .546 .553	76 .733* .528	60 .826 .769	136 .783* .671	137 .558 .483	119 .746 .696	256 .653 .607
Educ- ion N Dept. P.R.	80 .495 .556	228 .635 .607	308 .586 .579	26 .640 .578	64 .651 .653	90 .645 .631	106 .470 .521	292 .634 .607	398 .596 .584
Engin- eering N Dept. P.R.			60 .732 .588			42 .831 .740			102 .750 .633
Science N Dept. P.R.	107 .632 .693	22 .621 .671	129 .625 .671	109 .799 .788	23 .909 .926	132 .818 .814	216 .722 .698	45 .796 .800	261 .737 .713
Total N Dept. P.R.	307 .555 .561	310 .610 .584	617 .560 .558	253 .718 .664	147 .791 .764	400 .735 .697	560 .635 .586	457 .679 .648	1017 .636 .605

*Difference statistically significant at 5% level or better.

TABLE IV: COMPONENTS OF REGRESSION EQUATIONS TO PREDICT FRESHMAN UNIVERSITY AVERAGE IN FOUR FACULTIES BY SEX AND SIZE OF GRADUATING HIGH SCHOOL FROM GRADE XII PRINCIPALS' RATINGS

Faculty	School Size	Sex	N	R	Beta Weights					Constant	S.E. est.
					English 30	Social St. 30	Math. Average	Science Average	For.Lang. Average		
Arts	Small	Male	61	.484	.274	-.054	-.034	.445	-.032	18.07	+9.01
		Female	59	.635	.148	.074	.073	.166	.054	27.45	+6.07
	Large	Male	76	.528	.171	-.034	.077	.257	.116	22.42	+8.17
		Female	60	.769	.160	.075	.019	.329	.196	10.27	+6.63
Education	Small	Male	80	.556	.198	.078	.050	-.095	.227	29.07	+6.92
		Female	228	.607	.172	.290	.079	.197	.014	20.22	+6.18
	Large	Male	26	.578	.072	.163	-.021	.092	.138	32.37	+5.85
		Female	64	.653	.179	.321	.081	.064	.147	8.83	+7.33
Engin- eering	Small Large	Male	60	.588	-.086	.217	.254	.705	-.162	-11.56	+11.18
		Male	42	.740	-.192	.063	.629	.552	.015	-17.02	+9.36
Science	Small	Male	107	.693	.266	.187	-.071	.547	.035	- 6.08	+8.49
		Female	22	.671	-.445	.023	.014	.504	.550	15.97	+8.28
	Large	Male	109	.788	.214	.106	.277	.259	.159	- 7.41	+8.44
		Female	23	.926	.203	.390	.220	.140	.154	14.48	+4.99

would greatly facilitate planning in the University if these data were used as a basis for early provisional admission to the University. For these students, admission could still be subject to satisfactory performance on the Departmentals. The elimination of uncertainty by permitting University officials to make earlier administrative plans, by enabling students to make housing and financial arrangements for attendance at University, and, more particularly, by the facilitation of more accurate academic guidance information in the high school before the end of the school year, would offer advantages which would more than offset the small loss in prediction efficiency occasioned by the use of Principals' Ratings. The regression equations for such predictions using the Principals' Rating scores as predictor variables by sex, faculty to be entered, and size of graduating high school are reported in Table IV.

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